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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,847	07/03/2003	Manabu Tanaka	239402US2TTC	3906

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EXAMINER	
MALEVIC, DJURA	

ART UNIT	PAPER NUMBER
2884	

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/611,847	TANAKA ET AL.	
	Examiner	Art Unit	
	Djura Malevic	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28,42-48,51 and 52* is/are rejected.

7)☒ Claim(s) *29-41,49 and 50* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 16, 20, 21, 42, 44 – 48, 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomisaki et al. (EP 1067606).

Regarding claim 1, Tomisaki discloses a radiation detector (Fig. 4) comprising a detection member including a plurality of pixels 3 and configured to generate a first charge, a first driver 21a configured to supply the detector with a first predetermined voltage to generate a first charge, an integration amplifier 23a configured to amplify the first charge generated from the detector, and an adjustment member 6a between the detector and integration amplifier, configured to adjust an offset component.

Regarding claim 2, Tomisaki discloses that the offset component is a charge generated from the detection element when not radiated to the detector [0016].

Regarding claim 3, Tomisaki discloses that the offset component is a charge output from the integration amplifier when not radiated to the detector [0016].

Regarding claim 4, Tomisaki discloses that the adjustment member reduces the offset component [0016].

Regarding claim 5,Tomisaki discloses that the plurality of pixels 3 comprises: a conversion element 31, configured to convert the radiation to a first charge; a capacitor 32, configured to store the first charge converted by the conversion element; and a switching element, configured to

generate the charge stored in the capacitor in response to the supply of voltage from the driver [0012].

Regarding claim 6, Tomisaki discloses a switching element to be a TFT 33 [0013].

Regarding claim 7, Tomisaki discloses the adjustment member formed on a substrate, and where the detection member is produced [0002].

Regarding claims 8 and 9, Tomisaki discloses that the adjustment member includes a TFT 61 (second switching element) (Fig. 4).

Regarding claim 10, Tomisaki discloses (Fig. 9) that a TFT 61 is connected to a second capacitor 9.

Regarding claim 11, Tomisaki discloses (Fig. 13B) that one terminal of the TFT 61 may be grounded.

Regarding claim 12, Tomisaki discloses (Fig. 13C) that one terminal of the TFT 61 may maintain a predetermined potential.

Regarding claim 13, Tomisaki discloses (Fig. 13D) that one terminal of the TFT 61 may be left open.

Regarding claims 14, 15 and 16, Tomisaki discloses (Fig. 28A) a predetermined parasitic capacitance 91,3 of the TFT 33 where, the parasitic capacitance is generated at a crossing point between the signal line and the first adjustment line.

Regarding claim 20, Tomisaki discloses (Fig. 4 and Fig. 28) that the fine adjustment member includes a plurality of first adjustment lines, wherein the adjustment lines cross the signal lines creating parasitic capacitance.

Regarding claim 21, Tomisaki discloses (Fig. 4) a plurality of integration amplifiers 23a, wherein the first adjustment member adjusts the offset component for each of the plurality of amplifying elements independently [0012].

Regarding claim 42, Tomisaki discloses (Fig 4) a second gate driver 22 applies a predetermined voltage to the control lines 7 for the reason that the first adjustment member adjusts the offset component [0017].

Regarding claim 44, Tomisaki discloses that controller 25 supplies a reset signal to control line 8 for resetting the integrating circuits 23 during periods before and after the predetermined read time [0026].

Regarding claim 45, Tomisaki discloses that an adjustment line 7 and a second driver 22 are configured to supply the first adjustment line 7 with a second predetermined voltage between the first and second timings. Tomisaki also discloses that the adjustment member 6 adjusts the offset component [0018 – 0026].

Regarding claims 46 and 48, Tomisaki discloses the second driver terminates (Turns on/off) the supply of the second predetermined voltage between the second timing and the first timing. Tomisaki also discloses that the first driver supplies the detection member with the first predetermined voltage in a period between the first timing and the termination by the second driver (Fig 5) [0018 – 0026].

Regarding claim 47, Tomisaki discloses the first driver wherein, the driver supplies the detection member with the first predetermined voltage in a period between the first timing and the termination by the second driver (Fig 5) [0018 – 0026].

Regarding claim 51, Tomisaki discloses (Fig. 29) an X-ray diagnosis apparatus comprising a radiation source 303 and a radiation detector 301. The said radiation detector

comprises a detection member including a plurality of pixels and configured to generate a first charge. Also, Tomisaki discloses a first driver configured to supply the detector with a first predetermined voltage to generate a first charge, an integration amplifier configured to amplify the first charge generated from the detector, and an adjustment member between the detector and integration amplifier, configured to adjust an offset component. Tomisaki discloses an image-storing unit 308 (memory) configured to store a first of the detection signals obtained without the radiation generated by the radiation generator. Additionally, Tomisaki discloses a processor 306 configured to obtain difference signal and a display 307 which, displays images detected by the radiation detector 301, and those processed by the image-processing (difference signal) unit 306.

Regarding claim 52, Tomisaki discloses a radiation detector comprising: a detection member including a plurality of pixels and configured to generate a first charge; a first driver configured to supply the detector with a first predetermined voltage to generate a first charge; an integration amplifier configured to amplify the first charge generated from the detector; and an adjustment member between the detector and the integration amplifier configured to adjust an offset component. Additionally, Tomisaki discloses a second driver 22 is configured to start to supply the first adjustment line 7 with a second predetermined voltage between the first and second timings for the reason that the adjustment member 6 adjusts the offset component [0018 – 0026].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17 –19 are rejected under 35 U.S.C. 103(a) as being obvious over Tomisaki.

Regarding claims 17 –19, Tomisaki discloses crossing signal and adjustment lines (Fig 4). Tomisaki fails to disclose the single lines and adjustment lines with different sizes at the crossing point, however it would have been obvious at the time of the invention was made to a person of ordinary skill in the art to modify Tomisaki, since it is conventionally used and known in the art of electronics that between two lines, the parasitic capacitance can be altered by the shape of the signal lines at crossing.

Claims 23 - 28 are rejected under 35 U.S.C. 103(a) as being obvious over Tomisaki in view of Kwak et al. (US Pub. 2001/0024254 A1).

Regarding claims 23 – 28, Tanaka discloses the invention according to claim 22, but Tanaka does not expressly disclose the radiation detector further comprising a pad configured to bundle the plurality of signal lines. Kwak discloses what is well known and conventional used in electronics, a tab system (fig. 1) that electrically connects signal lines to a pad along a circuit [0003-0004].

It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Tomisaki to include a pad such as that taught by Kwak, since pads simplify connections and are conventionally used in electronics.

Allowable Subject Matter

Claims 29 – 41, 49 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 29, the prior art of record does not suggest or teach a radiation detector comprising a second adjustment member between the detection member and the integration amplifier, and configured to reduce a second charge resulting from the first predetermined voltage supplied to the detection member from the first diver. Also, the second charge being included in the first charge to be amplified by the integration amplifier.

Claims 30 – 41, 49 and 50 are allowed because they further limit claim 29.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djura Malevic whose telephone number is (571) 272-5975. The examiner can normally be reached on Monday thru Friday between 8:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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